

the reflected Light will be more in proportion to the Light than they were in the incident green Light, and thereby will draw the reflected Light from green towards their Colour. And therefore the red Lead will appear neither red nor green, but of a Colour between both.

In transparently coloured Liquors 'tis observable, that their Colour uses to vary with their thickness. Thus, for instance, a red Liquor in a conical Glass held between the Light and the Eye, looks of a pale and dilute yellow at the bottom where 'tis thin, and a little higher where 'tis thicker grows orange, and where 'tis still thicker becomes red, and where 'tis thickest the red is deepest and darkest. For it is to be conceived that such a Liquor stops the indico-making and violet-making rays most easily, the blue-making rays more difficultly, the green-making rays still more difficultly, and the red-making most difficultly: And that if the thickness of the Liquor be only so much as suffices to stop a competent number of the violet-making and indico-making rays, without diminishing much the number of the rest, the rest must (by Prop. 6. Lib. 2.) compound a pale yellow. But if the Liquor be so much thicker as to stop also a great number of the blue-making rays, and some of the green-making, the rest must compound an orange; and where it is so thick as to stop also a great number of the green-making and a considerable number of the yellow-making, the rest must begin to compound a red, and this red must grow deeper and darker as the yellow making and orange-making rays are more and more stopt by increasing the thickness of the Liquor, so that few rays besides the red-making can get through.

Of

Of this kind is an Experiment lately related to me by Mr. Halley, who, in diving deep into the Sea, found in a clear Sun-shine day, that when he was sunk many Fathoms deep into the Water, the upper part of his Hand in which the Sun shone directly through the Water looked of a red Colour, and the under part of his Hand illuminated by Light reflected from the Water below looked green. For thence it may be gathered, that the Sea-water reflects back the violet and blue-making rays most easily, and lets the red-making rays pass most freely and copiously to great depths. For thereby the Sun's direct Light at all great depths, by reason of the predominating red-making rays, must appear red; and the greater the depth is, the fuller and intenser must that red be. And at such depths as the violet-making rays scarce penetrate unto, the blue-making, green-making and yellow-making rays being reflected from below more copiously than the red-making ones, must compound a green.

Now if there be two Liquors of full Colours, suppose a red and a blue, and both of them so thick as suffices to make their Colours sufficiently full; though either Liquor be sufficiently transparent apart, yet will you not be able to see through both together. For if only the red-making rays pass through one Liquor, and only the blue-making through the other, no rays can pass through both. This Mr. Hook tried casually with Glass-wedges filled with red and blue Liquors, and was surprized at the unexpected event, the reason of it being then unknown; which makes me trust the more to his Experiment, though I have not tryed it myself. But he that would repeat it, must take care the Liquors be of very good and full Colours.

S 2

Now